

## **REMARKS**

Claims 15-19 are pending in this application. By this Response, no claims have been amended, cancelled, or withdrawn. Attached hereto is a complete listing of all the pending claims with their current status listed parenthetically.

### **Rejection Under 35 U.S.C. § 102(e)**

In paragraphs 1 and 2 of the Office Action, the Examiner rejects claims 15, 16, 18 and 19 under 35 U.S.C. § 102(e) as being anticipated by U.S. published patent application 2002/0018458 ("Aiello"). As discussed below, Applicant respectfully traverses this rejection.

The present application, serial no. 09/599,968 (the '968 application), claims priority to patent application serial no. 09/433,520, filed November 3, 1999 (now U.S. patent 6,275,544). This priority claim can be found on the '968 application's USPTO filing receipt, mailed October 20, 2000, and can also be found on the first paragraph of the '968 application's specification.

Because the November 3, 1999 priority date is prior to the Aiello September 7, 2001, filing date, the Aiello reference is not prior art., and thus is not a proper 35 U.S.C. § 102(e) reference. Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw this rejection.

### **Rejection Under 35 U.S.C. § 103(a)**

In paragraphs 3 and 4 of the Office Action, claims 15-19 stand rejected as unpatentable under 35 U.S.C. § 103(a) over U.S. patent 5,677,927 ("Fullerton") in view of U.S. Patent 6,243,375 ("Petch"). Applicant respectfully traverses this rejection.

In the Office Action, the Examiner states "[f]urther regarding to claim 16, Fullerton does not disclose said received spread spectrum rf modulated signals modulated by on-off keying."

The Examiner then states:

". . .the examiner takes Official Notice, therefore, it would have been obvious for one skilled in the art, within his skills and upon design preference or system requirement, to implement Fullerton et al in such a way that said spread spectrum rf modulated signals would be configured as signals modulated by on-off keying, as also taught by Fullerton et al, so that capability of channelization of system would be enhanced."

In response, Applicant respectfully traverses the Examiner's assertion and requests a reference in support of her position. M.P.E.P. § 2144.03

Moreover, the Examiner is invited to review Applicant's September 21, 2004 Response, which distinguished Fullerton from the present invention.

Specifically, Fullerton teaches an UWB communication system that uses one or more subcarriers (Abstract). "The impulse radio uses modulated subcarrier(s) for time positioning a periodic timing signal or a coded timing signal" (Abstract). Put differently, Fullerton uses a subcarrier to modulate the UWB, or impulse pulses. Fullerton then distinguishes his subcarrier invention by stating: "Prior impulse systems used non-subcarrier, baseband modulation (col. 2, lines 65-66). Fullerton also states: "the use of a subcarrier is an elegant, counter intuitive addition to the time domain impulse radio design" (col. 6, lines 58-60).

Applicant's claimed invention **IS** the non-subcarrier, baseband modulation type, which Fullerton distinguishes his invention from.

Futhermore, Fullerton further teaches: "Amplitude and frequency/phase modulation are unsuitable for this particular form of impulse communications" (col. 9, lines 29-30). Thus, **Fullerton teaches directly away from using amplitude modulation in UWB communications.**

## **A. The Law of Obviousness**

In order to establish a *prima facie* case of obviousness, three basic criteria must be met:

"First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined), must teach or suggest all of the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the applicant's disclosure." M.P.E.P. § 2142.

The Examiner's Section 103 rejection combines two references, Fullerton and Petch. Because a modification to the prior art is required to support this 35 U.S.C. section 103 rejection, an appropriate motivation to modify must be set forth in order to establish a *prima facie* case of obviousness. *See, In re Fritch*, 972 F.2d 1266 (Fed. Cir. 1992). The motivation to modify will be discussed below:

### **I. No motivation to combine references**

As discussed above, Fullerton teaches ultra-wideband, or impulse radio communication, which uses discrete electromagnetic pulses that may occupy bandwidths spanning hundreds of megahertz. Specifically, Fullerton teaches Gaussian monocycles having: a 0.5 nanosecond pulse width; a 2 gigahertz center frequency; and which occupy a bandwidth of approximately 160% of the center frequency (i.e., 3.2 gigahertz) [col. 8, lines 24-57].

In contrast, Petch teaches conventional communication that uses a substantially continuous sinusoidal carrier wave that operates at specific, assigned radio frequency channels. Specifically, Petch teaches methods and apparatus for synchronization in a wireless network where the wireless network is a conventional cellular network that access a conventional public switched telephone network (col. 1, lines 11-22). As is well known, conventional cell phones

employ a continuous carrier wave at a specific frequency, such as 700 MHz, or 800 MHz, and generally have about a 1.5 MHz bandwidth.

These are completely different communication technologies, and thus there is no motivation to combine these references.

## **II. No reasonable expectation of success.**

The second prong of a *prima facie* case of obviousness requires a reasonable expectation of success. However, according to M.P.E.P. § 2142.01 "if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious."

The Examiner proposes to combine Fullerton with Petch. As discussed above, Petch employs conventional carrier wave technology that emits a continuous waveform at a specific, narrow frequency. In contrast, Fullerton teaches ultra-wideband, or impulse radio technology that emits discrete electromagnetic pulses that span gigahertz of frequency.

Clearly, a fundamental change to Fullerton's principle of operation is required for the Examiner's proposed combination, and thus there is no reasonable expectation of success.

In view of the above discussion, Applicant respectfully submits that the Section 103 rejection of claims 15-19 has been traversed. Therefore, Applicant respectfully submits that the above response has traversed the rejection of independent claims 15-19.


**Conclusion**

Applicant believes that this Response has addressed all items in the Office Action and now places the application in condition for allowance. Accordingly, issuance of claims 15-19 at an early date is solicited. No fee is believed due with this response. However, the Commissioner is authorized to charge any fee required to our Deposit Account No. 50-3143, in the name of Pulse-Link, Inc. Should any issues remain unresolved, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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Date

  
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